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(71) Applicant(s)
Keith Shafto & Associates

(Incorporated in the United Kingdom)

Stone Pit Barn, Howland Road, MARDEN, Kent, TN12 8DH, United Kingdom

(72) Inventor(s)
Keith Shafto

(74) Agent and/or Address for Service
Marks & Clerk
57-60 Lincoln's Inn Fields, LONDON, WC2A 3LS, United Kingdom

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B25H 1/10

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(56) Documents Cited

GB 1582024 A	**WO 81/00370 A1**	**US 5165317 A**
US 4527605 A	**US 4105055 A**	**US 4062423 A**

(58) Field of Search
UK CL (Edition M) **B3B BMSX BMS1 BMS3 BMS4 BMV , B4X , B5L LQ LTF**
INT CL^5 **B23Q , B25H**
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(54) Power tool mounting

(57) In order to provide a power tool mounting for mounting a power tool above a work table, the power tool mounting has first fixing means 8 for engaging a work table and second fixing means 5, 6 in the form of rails for engaging a slider for the power tool. The rails 5, 6 may be moved from a first, storage position to a work position, at a distance from the work table, for mounting the power tool above the work table.

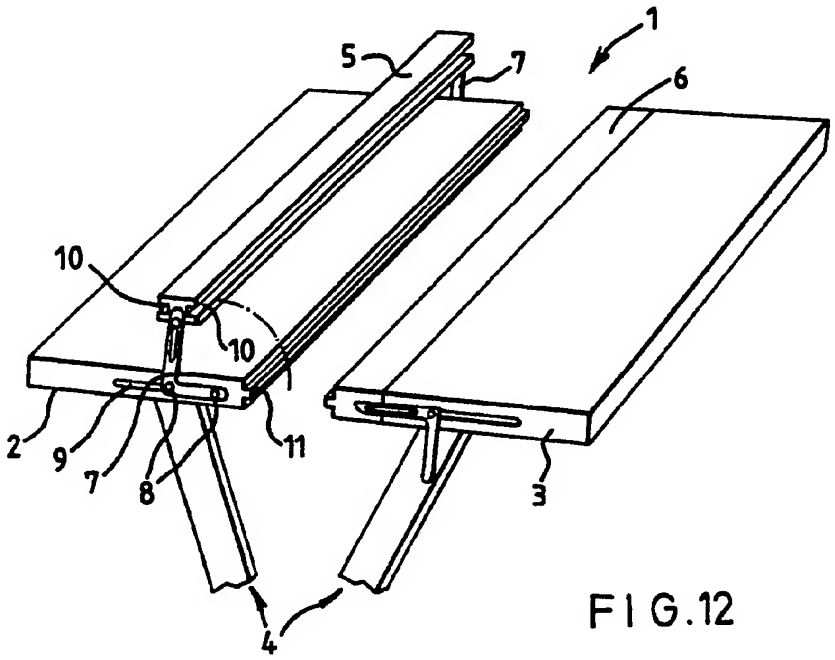

FIG.12

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At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

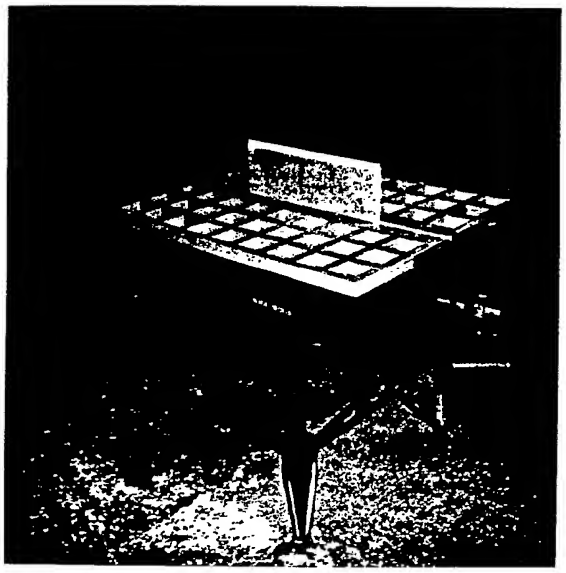

fig 1

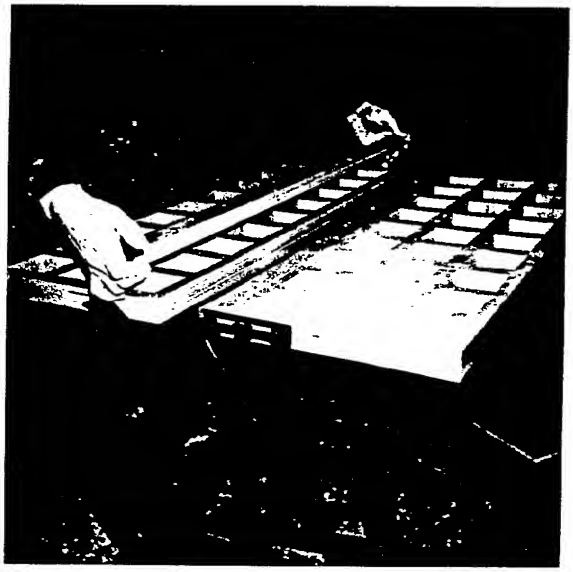

fig 2

fig 3

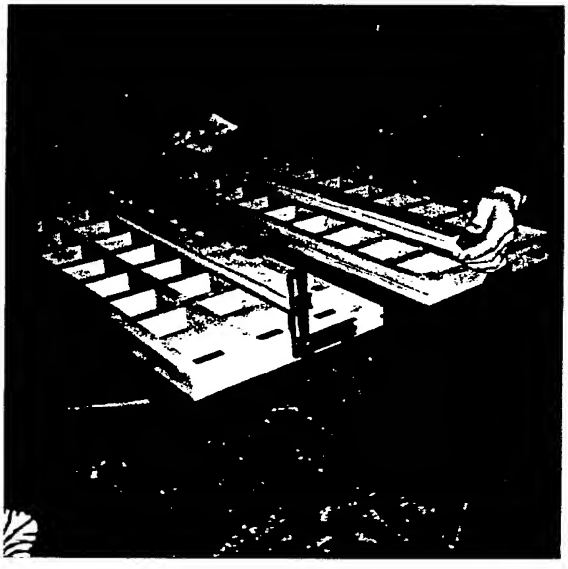

fig 4

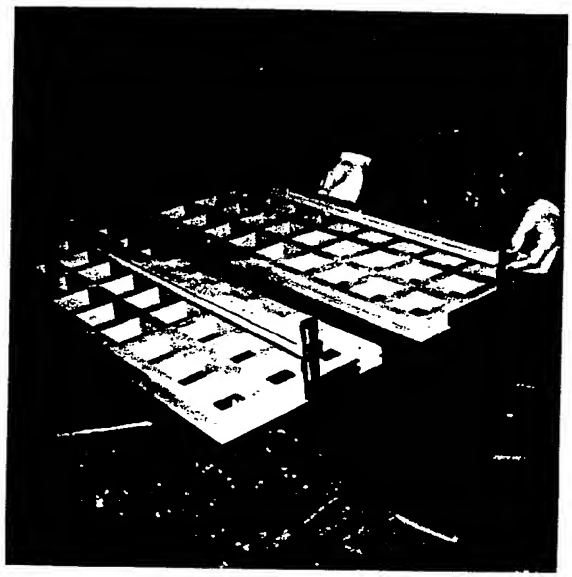

fig 5

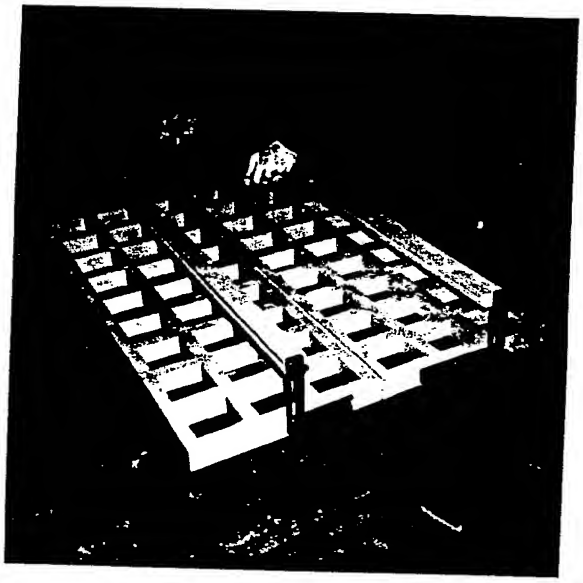

fig 6

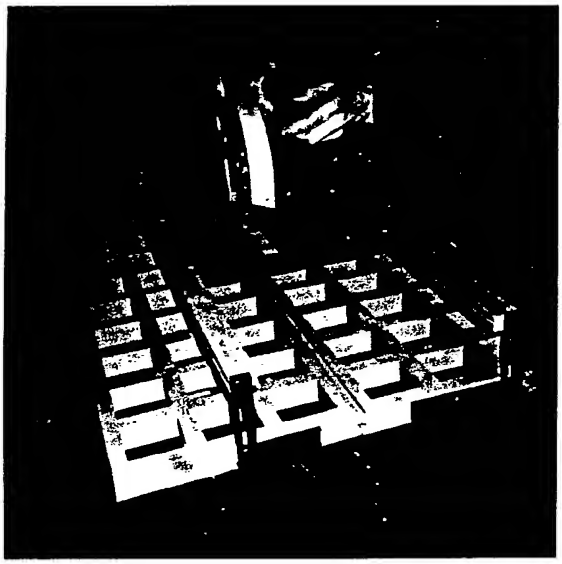

fig 7

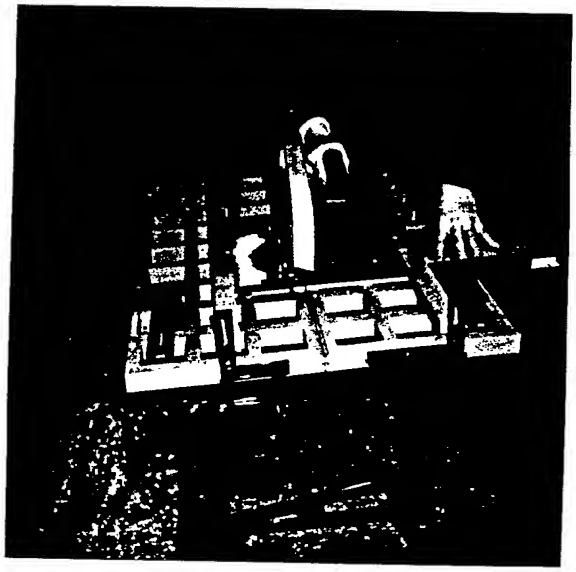

fig 8

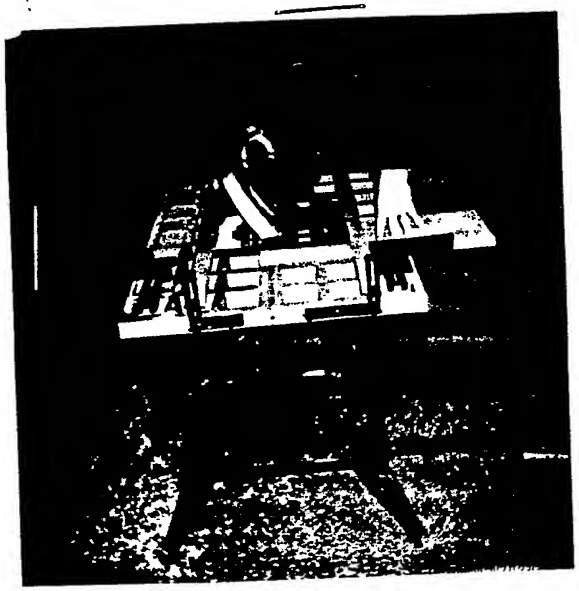

fig 9

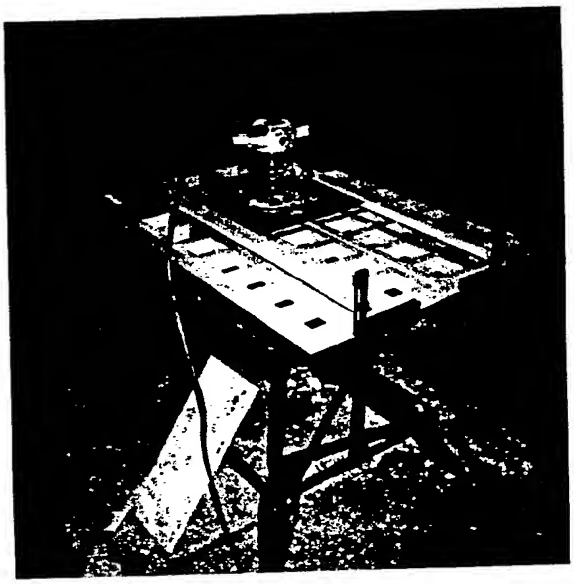

fig 10

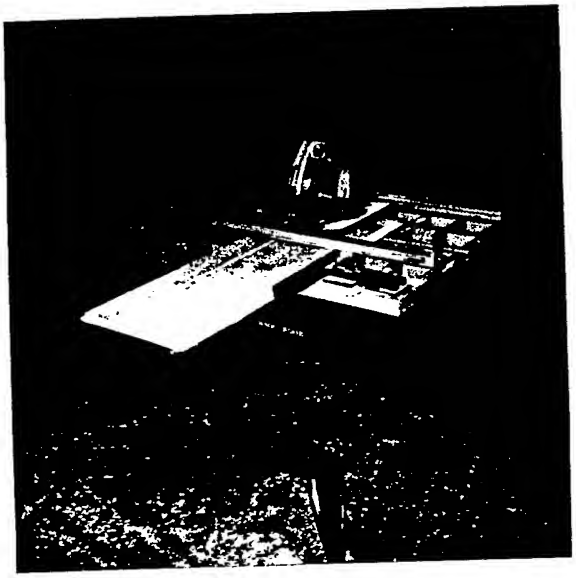

fig 11

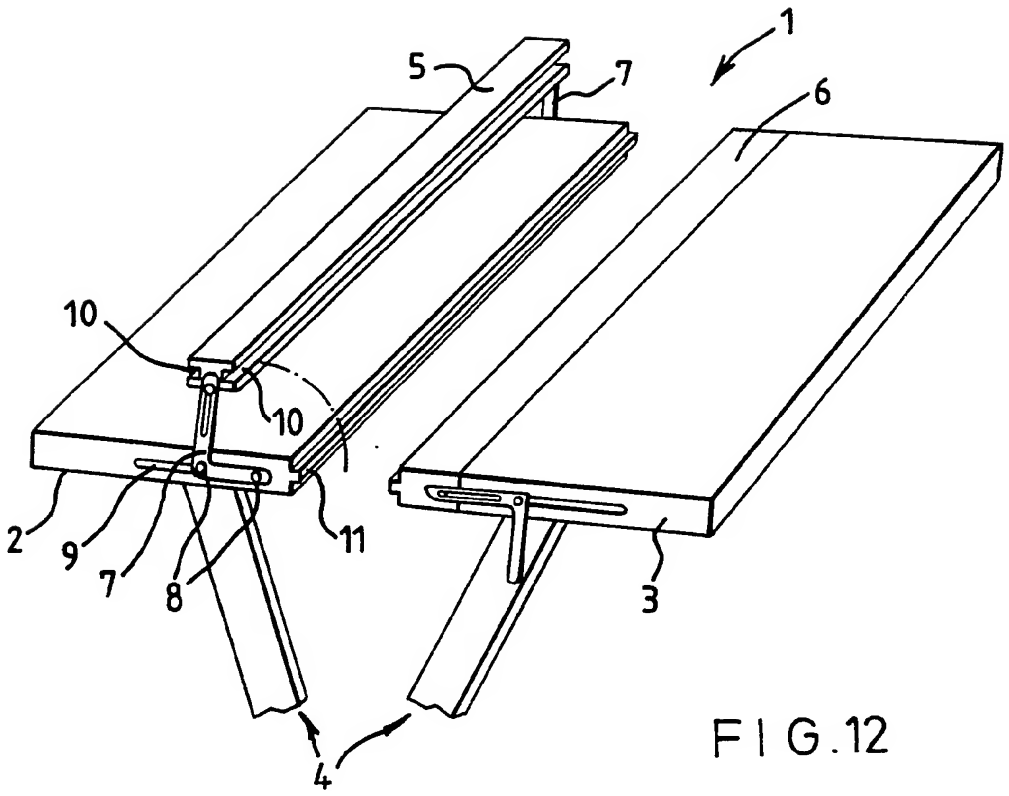

FIG.12

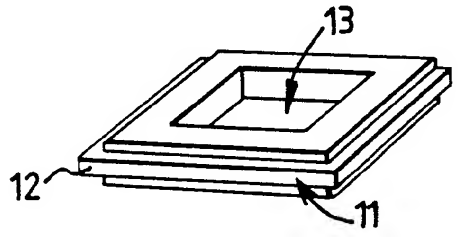

FIG.13

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POWER TOOL MOUNTING

The present invention relates to a power tool mounting for mounting a power tool to a worktable. By "worktable" is meant any apparatus for supporting a workpiece or tool, for example a bench or portable vice, but the present invention is particularly suitable for mounting a power tool to a workbench of the type capable of being used both as a bench and a vice, such as the WORKMATE (RTM) D.I.Y. workbench.

The invention can be used with any suitable form of power tool, particularly a hand held power tool. Such power tools are generally provided with a grippable portion and a tool means for working a workpiece protruding therefrom. The invention is particularly suitable for use with circular saws and routers. However, the invention may also be used to mount an unpowered tool to a worktable.

Many D.I.Y. worktables (workbenches and portable vices) do not provide for the fixing of hand-held power tools such as a circular saw or a router so that these tools can be used in conjunction with the worktable. Those that offer this facility do so by providing a fixing plate within the work surface that requires the power tool to be inverted and attached in a fixed position beneath the working surface with the cutting blade projecting above the working surface.

This arrangement has several disadvantages:

- fixing the power tool in position can be awkward
- changing the settings can be awkward
- change-over from one tool to another is time-consuming
- in all cutting operations it is necessary to pass the material to be cut through the cuting blade; rather than the more natural and easier method of fixing the material to be cut and moving the cutting blade through it.

The invention is a multi-task workbench that provides uniquely for the use of power tools mounted in an overhead position as one of its configurations.

As such it overcomes all the disadvantages of conventional workbenches where the power tools are mounted beneath the bench. Consequently:

The present invention provides a power tool mounting, having first fixing means for engaging a worktable and second fixing means displaced from the first fixing means for engaging a power tool, so that the power tool can be mounted at a distance from the worktable.

The invention allows a power tool to be mounted so that the tool means projects downwards (which is a safer and more convenient position) but can engage a workpiece which is resting on the worktable.

Preferably, the power tool mounting comprises rail means configured so that, in use, the rail means extends generally parallel to the surface of the worktable, the second fixing means being displaceably mounted on the rail means. This allows the power tool to be displaceably mounted with respect to the worktable and

to any workpiece resting on the table, so that the latter can be worked in a "natural" manner.

Preferably, there are two substantially parallel rail means. Preferably, these have tongue and groove means for slidably engaging a slider or base plate on which the second fixing means is provided.

The fixing means may comprise any suitable releasable fixing means, such as bolts, clamps, lugs and/or tongue and slot arrangements.

The present invention also provides a workbench combined with a power tool mounting substantially as set out above. Preferably, the power tool mounting can be fixed in a position for mounting a power tool and a second position for stowage. The power tool mounting may be rotatable between these positions. Preferably, the first fixing means is such that the power tool mounting is positionable at different positions and heights above the worktable. Preferably, the workbench comprises two relatively movable parts defining a vice gap therebetween, the power tool mounting comprising a pair of rail means which, in the second postion, form vice faces of the movable parts.

The present invention will be further described with reference to the accompanying drawings, in which:

Figure 1 shows a workpiece engaged with a suitable worktable for use with the present invention;

Figures 2 to 6 show a workbench according to the present invention with rail means in different positions;

Figures 7 to 9 show a workbench according to the present invention with power tool engaged;

Figure 10 shows a different power tool mounted on the workbench;

Figure 11 shows the workbench of Figures 7 to 9 with the power tool in a different configuration;

Figure 12 is a schematic isometric drawing of part of Figure 3; and

Figure 13 is an isometric schematic sketch of the second fixing means.

In figure 1 the product in its worktable configuration can be seen to consist of two surfaces that can be moved apart or brought together by means of two parallel worm-drive screws: in effect a large vice. It is shown for convenience on a Black & Decker "Workmate"(RTM) set of legs and vice apparatus: it could, however, rest upon its own simple base and legs.

Figures 2 to 5 show that the leading edges of the two surfaces towards the jaws of the vice are in fact separate sections, held on L-shaped hinges. When part of the working surface, they are held in place by bolts passing through the L-shaped hinges and into the edges of the work surface: they are also located to the front edge of the work surface by means of a 'tongue-and-groove' section along their length. When rotated around the L-shaped hinges (which also slide along slots in the edge of the work surfaces, to be re-fixed by bolts at pre-determined locations), these sections become a pair of rails parallel to each other, fixed at 90 degrees to the work surface, and able to be moved upwards and downwards. At this point they can serve the purpose of "holdfasts" allowing three-dimensional clamping of work. Their main function, however, is to hold a base plate between them that will accommodate power tools.

Figure 6 shows the universal base plate being inserted in slot guides in the parallel rails which have been "locked off" in the fully extended position. This plate is able to move freely along the rails.

Figure 7 shows a circular saw being offered up to the base plate. (It is held in position by standard lugs.)

Figure 8 shows the table and saw in action, with the wood being cut held against a fence secured to the work surface.

Figure 9 shows that the arrangement will allow for angled cross-cutting of material.

Figure 9 shows that other power tools, such as a router, can be accommodated in the arrangement.

Figure 11 shows the circular saw now fixed in a different position, at 90 degrees to the rails, thus enabling rip-cuttin of material along its length. This new alignment is easily achieved as the universal plate is a square, allowing the tool and plate to be slid out from the rails, turned 90 degrees, and slid back in again. In this set-up the base and power tool are further secured by bolts located through the rails and base plate, locking it in position.

Figure 12 shows the workbench of Figure 3 in more detail. The workbench 1 comprises two movable parts or surfaces 2, 3, and a frame comprising legs 4, not shown in detail. Two sections 5 and 6 are provided, which are movable with respect to the parts 2 and 3. Section 5 is shown in a raised position above the part 2. It is hingeably mounted on L-shaped hinges 7 which are fixed by bolts 8 in slots 9 formed in the part 2. The slots 9 allow the section to be selectively positioned on part 2. Grooves 10 are formed on the section 5. When lowered, one of these slots engages tongue 11 on part 2 (section 6 being shown in this position). When both sections 5 and 6 are raised, they define rail means in which a slider 12, shown in Figure 13, may be engaged. This slider 11 has tongues 12, to engage the slots 10, and an orifice 13. The slider 11 is engageable with a power tool with the tool means thereof protruding through orifice 13, so that it can engage a workpiece (not shown).

Claims.

1. A power tool mounting, having first fixing means for engaging a work table and second fixing means displaced from the first fixing means for engaging a power tool, so that the power tool can be mounted at a distance from the worktable.

2. The power tool mounting of claim 1, further comprising rail means configured so that, in use, the rail means extends generally parallel to the surface of the worktable, the second fixing means being displaceably mounted on the rail means.

3. The power tool mounting of claim 2, wherein there are two substantially parallel rail means.

4. The power tool mounting of claim 3, wherein the parallel rail means have tongue and groove means for slidably engaging a slider on which the second fixing means is provided.

5. A workbench arrangement comprising a workbench combined with a power tool mounting as set forth in any of claims 1 to 4.

6. The workbench of claim 5, wherein the power tool mounting is fixable in a first position for mounting a

power tool and in a second position, for stowage.

7. The workbench arrangement of claim 6, wherein the power tool mounting is rotatable between the first and second positions.

8. The workbench arrangement of any of claims 5 to 7, werein the first fixing means is such that the power tool mounting is positionable at different positions and heights above the worktable.

9. The workbench arrangement of any of claims 5 to 7, wherein the workbench comprises two relatively moveable parts defining a vice gap therebetween, the power tool mounting comprising a pair of rail means which, in the second position, form vice faces of the moveable parts.

Patents Act 1977 9
Examiner's report to the Comptroller under Section 17
(Search report)

Application number
GB 9402756.2

Relevant Technical Fields

(i) UK Cl (Ed.M) B3B (BMS1, BMS3, BMS4, BMSX, BMV), B4X, B5L (LQ, LTF)

(ii) Int Cl (Ed.5) B23D, B25H

Search Examiner
V L C PHILLIPS

Date of completion of Search
24 JUNE 1994

Databases (see below)
(i) UK Patent Office collections of GB, EP, WO and US patent specifications.

(ii) ONLINE DATABASES: WPI

Documents considered relevant following a search in respect of Claims :-
1-9

Categories of documents

X: Document indicating lack of novelty or of inventive step.

Y: Document indicating lack of inventive step if combined with one or more other documents of the same category.

A: Document indicating technological background and/or state of the art.

P: Document published on or after the declared priority date but before the filing date of the present application.

E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.

&: Member of the same patent family; corresponding document.

Category	Identity of document and relevant passages		Relevant to claim(s)
X	GB 1582024 A	(BLACK & DECKER) see Figures 1 and 4	1 at least
X	WO 81/00370 A1	(BLACK & DECKER) see eg Figures 6, 12	1 at least
X	US 5165317 A	(FINDLAY) see Figures 4, 5	1 at least
X	US 4527605 A	(NEWJIG) see Figure 1	1 at least
X	US 4105055 A	(BRENTA) see Figures 1 and 2	1 at least
X	US 4062423 A	(ARMBRUSTER) see Figure 1	1 at least

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